



# USAID | LEBANON

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## INITIAL ENVIRONMENTAL EXAMINATION IEE Water Awareness on the Lebanon Mountain Trail Project

### PROGRAM/ACTIVITY DATA:

Country Code: 268  
Program Area: Environment  
Program Element: Natural Resources and Biodiversity  
Country or Region: Lebanon  
Activity Name: Water Awareness on the Lebanon Mountain Trail Project (WAT-LMT)

Funding Begin: 2012                      Funding End: 2014                      LOP Amount: \$179,663  
Sub-Activity Amount:

IEE Prepared by: Heath Cosgrove – Activity Manager                      Date: August 30, 2012  
IEE Amendment (Y/N): N                      If “Yes,” Number @ Date of Original IEE:

Environmental Media and/or Human Health Potentially Impacted (check all that apply):  
air \_\_\_\_ water ☒ land \_\_\_\_ biodiversity ☒ human health ☒ other \_\_\_\_ none \_\_\_\_

### ENVIRONMENTAL ACTION RECOMMENDED: (Place X where applicable)

Categorical Exclusion:	<input checked="" type="checkbox"/>	Deferral:	<input type="checkbox"/>
Positive Determination:	<input type="checkbox"/>	Negative Determination	
Exemption:	<input type="checkbox"/>	With conditions:	<input checked="" type="checkbox"/>

### COUNTRY ENVIRONMENTAL CONDITIONS:

Lebanon is a small country located on the eastern end of the Mediterranean Sea. Its 225 km-long (140 mi.) coast is bordered by a narrow plain that disappears in some places. Lebanon's mountains are rugged and are mostly made up of Jurassic and Cretaceous limestone and sandstone. The climate is Mediterranean with hot, non-rainy summers and warm, moist winters.

Water resources: Water is Lebanon's most precious natural resource and the mountains of Lebanon constitute the last frontier for water conservation. Many factors, acting together or in isolation, are impacting water quantity and quality including rapid population growth, rapid and haphazard urbanization, economic growth and climate change. Lebanon's Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) made alarming projections of climate change impacts on water resources availability; in particular, decreased precipitation will impact water quantities discharged from springs. Precipitation results in an estimated yearly flow of 8,600 million cubic meters (Mm<sup>3</sup>). This gives rise to 40 major streams and small rivers and more than 2,000 springs. Many if not most of these watercourses run dry before the end of the summer months. Lebanon's water resources are under stress. Available water including rivers and springs, storage dams and groundwater exceed projected water demand. However, unsustainable water management practices, increasing water demand from all sectors, water pollution, and ineffective water governance are key obstacles for meeting the water demand over the medium and long term.



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*Air quality:* The degradation of air quality in Lebanon, estimated at \$170 million (WR, 2004) per year, is a growing environmental concern for public health. Air pollution is affecting millions of people living in mostly urban and peri-urban areas where smog, small particles, and toxic pollutants pose serious health concerns.

*Biodiversity and Forests:* Lebanon's biodiversity results from the country's topographic and altitudinal diversity derived from the biological diversity of the Mediterranean region. Lebanon's overgrazed grasslands, agricultural lands, evergreen woodlands, and brush-land is evidence of that diversity. However, Lebanon has been undergoing deforestation since 8,000 years. Currently, forests and other wooded lands cover 32.4 percent of the country's territory.

*Land Resources:* Population growth, lack of urban planning, the continued loss of arable land and biodiversity, concern about food security and the rising costs of infrastructure are major factors impacting land resource and natural environment. Current land management practices are eroding the country's natural resources (soil, water, green cover, and landscapes).

*National Environment Policies and Procedures:* Environmental governance is a relatively new concept in Lebanon. In the last two decades since the end of the civil war, Lebanon has seen a qualitative and quantitative growth in environmental institutions, and a number of milestone laws and regulations have been approved and enacted. However, there is still no direct reference to the environment in Lebanon's Constitution. Environmental laws and regulations originate at the level of the legislative body with the Parliamentarian Committee for Environment and at the Executive level with the Ministry of Environment (MoE). The Environmental Committee tends to be slow in accelerating the approval of key legislations. The MoE is the second youngest Ministry in Lebanon, it was established in 1993. Similar to all public administrations in Lebanon, the MoE lacks human and financial resources. It receives the lowest budget among the different ministries. Consequently, its role remains limited to strategic planning, guidance, proposal of legislations with modest monitoring and enforcement.

### **BACKGROUND**

The Water Awareness on the Lebanon Mountain Trail (WAT-LMT) is a two-year program to establish and implement a methodical approach to protect natural springs in Lebanon while promoting water awareness. Through several activities, the program aims to mobilize the four national Water Establishments, local affiliated communities, and visitors of the Lebanon Mountain Trail (LMT) to generate greater protection of Lebanon's springs and water resources along the LMT, to infuse water education in selected schools on and off the LMT, and to promote water awareness and behavior change through public discourse. The program intends to protect water and ecology along the LMT and improve understanding of mountain springs. These high-altitude springs supply water to mountain communities for domestic and irrigation uses and support fragile ecosystems. They must be protected from irreversible degradation affecting water quantity and/or quality. The program will also bolster the role of the LMT as a national conservation corridor and a sustainable international tourism destination.

The Lebanon Mountain Trail Association (LMTA) was established in October 2007 under the USAID-funded LMT project to expand economic opportunities and conserve the natural, cultural and architectural heritage of rural Lebanon. This premiere long-distance hiking trail spans 440 km from Lebanon's rural north to rural south, meandering through and near 75 towns and villages, grouped into 26 day sections. The trail transects three Nature Reserves, one World Heritage Site, one Biosphere Reserve and several Important Bird Areas. The LMT showcases the natural beauty and cultural wealth of Lebanon's mountains and offers unlimited opportunities for sustainable economic development in rural areas through environmentally- and socially-responsible tourism. The LMT today attracts more than 25,000 visitors each year. Sustaining the LMT however requires legal protection from unwanted development and infringements on the public domain, including communal forests and springs.

The different project components are as follows:



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- **Component 1- Survey and Catalogue Important Springs Along the LM :** consists in surveying and sampling springs identified on the LMT for information on geology, land use, land ownership, historical overview, water quality, water flow, and water distribution and use. LMTA will organize this information into a geo-referenced database designed to store and query the data related to springs using ArcGIS software. The database will be shared online so people can upload information including photos, comments and information on threats.
- **Component 2 – Conduct Water Knowledge Surveys:** consists in establishing a knowledge baseline by conducting several surveys targeting households (at home), youth (at school), farmers and hikers/visitors (on the LMT). LMTA will design and implement a Knowledge-Attitude-Practice (KAP) survey related to water. The KAP survey is based on a six-step process which includes: defining the survey objectives, developing the survey protocol, designing the survey questionnaire, conducting the survey, and analyzing the data.
- **Component 3 – Facilitate a Water Dialogue with Key Stakeholders:** consists in initiating and facilitating a water dialogue with key water stakeholders including Water Establishments, trailside municipalities, water boards (if they exist), local imams and priests, and the Lebanese Youth Shadow Government (a Lebanese NGO). LMTA will organize roundtable discussions in each Governorate with relevant stakeholders. At the end of the program, LMTA will share its database of LMT springs with all those who participated in the water dialogue and encourage local WEs and municipalities to continue water sampling and flow measurements over the long-term.
- **Component 4 –Promote Water Awareness in Public Schools on the LMT:** consists in designing a water module to be included in the LMT Teachers' Guide. The proposed water module will provide a description of the water cycle in Lebanon, define key water concepts and terminology, design classroom and field activities related to water, and formulate at least three take-home messages. LMTA will organize half a dozen trips for public school children on the LMT to discover springs and explore water issues on the trail (e.g. erosion, flow, temperature, energy). LMTA will also organize a poster competition among participating schools for the best water slogan and spring photo.
- **Component 5 - Sensitize Hikers and Visitors on the LMT to the Heritage Value of Springs:** focuses on designing and producing a reader-friendly Guide on the LMT Springs. The guide will display photos of all the springs, describe their historical significance, and their value to the local community and end-users. LMTA will also deliver a half-day orientation course on LMT springs to LMT guides.
- **Component 6: Organize Water Day/Clean Up Activities:** is all about organizing water day activities. In addition to school walks, LMTA will organize other water activities in trailside communities to coincide with International Mountain Day (December 11, 2012), World Water Day (March 22, 2013) and/or World Environment Day (June 5, 2013). Water day activities will include cleanup of springs and water cascades (waste tends to accumulate near running water) in full coordination with the local municipalities.

Table 1 lists activities covered in this IEE as well as the recommended threshold decisions

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**Table 1: Proposed program activities and recommended threshold decisions**

No	Activities	Effect on Natural or Physical Environment	Determination and Reg. 216 actions required
I	All project actions and activities that do not have an effect on the natural or physical environment. This includes sampling and surveying springs, data gathering, analysis, and dissemination, knowledge baseline surveys, water dialogues, developing water awareness materials and modules targeting public schools, developing LMT springs guide, and organizing water trips and water competitions. <b>(Activities under components 1, 2, 3, 4 and 5)</b>	No effect	<b>Categorical Exclusion</b> , no actions required.
II	For water day activities that involve clean up of springs and water cascades that may have a potential for negative impact on the environment if not properly managed and mitigated. <b>(Activities under component 6)</b>	Potential for adverse effect	<b>Negative Determination with Conditions</b> Environmental Review and Assessment Checklist (ERAC) is required to identify environmental effects, develop Environmental Mitigation and Monitoring Plans (EMMP), commensurate with potential adverse impacts using standard practice for waste collection and disposal.

**SUMMARY OF FINDINGS**

**Recommended Action: *Categorical Exclusion*** (approximately 60% of all funding) for activities under Section I Table I (components 1, 2, and 3). Pursuant to 22 CFR 216.2(c)(3), the originator of the activities has determined that program activities focusing on technical assistance and training, and other similar types of environmentally neutral actions, consist of types of interventions entirely within the categories listed in paragraph (c) (2), "Categorical Exclusions," of Section 216.2, "Applicability of Procedures," of Title 22 CFR Part 216, "AID Environmental Procedures," and therefore are categorically excluded from any further environmental review requirements. Activities under components 1, 2, and 3 involve research and meetings and are recommended for **Categorical Exclusion** per 22 CFR 216.2 (c)(2)(ii) as "Controlled experimentation exclusively for the purpose of research and field evaluation which are confined to small areas and carefully monitored", and 22 CFR 216.2 (c)(2)(iii) as "Analyses, studies, academic or research workshops and meetings".

**Recommended Action: *Categorical Exclusion*** (approximately 35% of all funding) for activities under Section I Table I (components 4 and 5). Pursuant to 22 CFR 216.2(c)(3), the originator of the activities has determined that program activities focusing on educational activities, and other similar types of environmentally neutral actions, consist of types of interventions entirely within the categories listed in paragraph (c) (2), "Categorical Exclusions," of Section 216.2, "Applicability of Procedures," of Title 22 CFR Part 216, "AID Environmental Procedures," and therefore are categorically excluded from any further environmental review requirements. Activities under components 4 and 5 involve awareness and



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educational activities are not expected to have any impact on the natural or physical environment, and therefore are recommended for **Categorical Exclusion** per 22 CFR 216.2 (c)(2)(i) as “education, technical assistance, or training programs except to the extent such programs include activities directly affecting the environment (such as construction)”.

**Recommended Action: *Negative Determination with Conditions*** (NDC, approximately 5% of all funding) for activities under Section II of Table 1 that have a potential for an adverse impact on the natural or physical environment. The originator of the action has determined that pursuant to 22 CFR 216.2, activities such as small infrastructure improvements of irrigation and potable water systems may have the potential for adverse environmental impacts. The Implementer shall prepare an Environmental Review and Assessment Checklist (ERAC) (attachment 1) to identify environmental effects for each site. The ERAC shall be approved by COR and MEO. Based on the findings of the ERAC the implementers shall prepare an Environment Monitoring and Mitigation Plan (EMMP,) commensurate with identified impacts or use good waste collection and disposal practice to be approved by COR and MEO.

#### **Implementer Procedures:**

In addition to the ERAC, the Implementer will employ the following processes for all relevant activities:

- Each activity should be conducted in a manner consistent with good design and implementation practices described in USAID *Environmental Guidelines for Small-Scale Activities in Africa*, 2nd edition as provided at: <http://www.encapafrica.org/egssaa.htm>; *IFC Environmental, Health and Safety Guidelines*. See Footnote<sup>1</sup>.
- Host country environmental, Occupational Health and Safety (OHS), and other relevant laws and regulations, standards, norms and best practices for environmental protection and management will be followed in implementing the activities. The implementer will ensure compliance by its staff, subcontractors, and sub-grantees with USAID regulations, policies, procedures, and acceptable best practices as well as compliance with applicable international environmental obligations of Lebanon.
- The implementer shall also ensure that the best environmental management practices for construction, excavation, dust control, and noise control are adopted, and that any solid wastes generated from activities are collected and transferred to appropriate waste management facilities, and that any wastewater generated from activities is properly disposed in community sewage networks and leading to available sewage treatment plants.
- Environmental conditions in this IEE will be incorporated into the award performance criteria for all partners and implementers, including subcontractors and grantees.

#### **Resource Allocation, Training and Reporting requirements:**

The award will include a requirement to follow all recommendations of this IEE.

The implementer will have the following documentation and reporting requirements associated with the environmental compliance:

- Annual Work Plans will have a section on the planned activities related to environmental compliance.
- Progress Reports will have, where appropriate, a brief section on the status of activities related to environmental compliance. Final Report will have a section that summarizes the program's activities related to environmental compliance.
- Brief Reports will be submitted to USAID at the completion of each NDC activity, and will include site visit reports which document that approved mitigation procedures were followed throughout

<sup>1</sup> *Environmental Guidelines for Small-Scale Activities in Africa*, 2nd edition as provided at: <http://www.encapafrica.org/egssaa.htm>; *IFC Environmental, Health and Safety Guidelines* as provided at: <http://www.ifc.org/ifcext/sustainability.nsf/Content/EnvironmentalGuidelines>, and <http://www- and Standard Conditions for Small-Scale Construction, Small-Scale Road Rehabilitation, Small-Scale Water and Wastewater Activities, and Small-Scale Irrigation Projects attached to this IEE 1>  
 wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/1999/06/03/000094946\_9904090

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implementation of the subject work. All such reports and documentation will be submitted to the Contracting Officer Representative (COR) and Mission Environmental Officer (MEO).

**Limitations of the IEE:**

This assistance doesn't cover activities involving:

1. Assistance, procurement or use of genetically modified organisms (GMOs) will require preparation of biosafety assessment review in accordance with ADS 201.3.12.2(b) in an amendment to the IEE approved by Asia BEO.
2. DCA or GDA programs.
3. Procurement or use of Asbestos Containing Materials (ACM) (i.e. piping, roofing, etc), Polychlorinated Biphenyl's (PCB) or other toxic/hazardous materials prohibited by US EPA as provided at: <http://www.epa.gov/asbestos> and/or under international environmental agreements and conventions, e.g. Stockholm Convention on Persistent Organic Pollutants as provided at: <http://chm.pops.int>
4. Provision of equipment and training on the safe and sound use of agro-chemicals or pesticides, and the purchase of any agro-chemicals or pesticides.

**Revisions:**

Pursuant to 22 CFR216.3 (a)(9), if new information becomes available which indicates that activities to be funded by the Program might be "major" and the Program's effect "significant," the threshold decisions for those activities listed above with Negative Determination will be reviewed and revised by the originator of the project and submitted to the Bureau Environmental Officer for approval and, if appropriate, an environmental assessment will be prepared.

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**APPROVAL OF RECOMMENDED ENVIRONMENTAL ACTIONS**

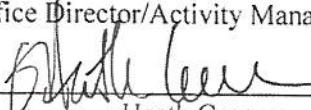
**CLEARANCE:**

Mission Director

  
Azza El-Abd

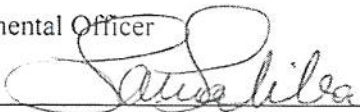
9/13/12  
Date

Economic Growth Office Director/Activity Manager

  
Heath Cosgrove

9/13/12  
Date

Mission Environmental Officer

  
Sana Saliba

9/13/12  
Date


Regional Environmental Advisor/Asia & OAPA

*Concurred in attached email*  
Andrei Barannik

9/13/12  
Date

**APPROVAL:**

Bureau Environmental  
Officer

  
Robert Macleod

Date: 9/14/12  
Approved: ☒  
Disapproved: ☐

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**DISTRIBUTION:**

Mission Environmental Officer  
IEE File  
OAA – USAID/Egypt



**ENVIRONMENTAL REVIEW & ASSESSMENT CHECKLIST (ER Checklist)**

The purpose of this *Environmental Review and Assessment Checklist (ER Checklist)* is to determine whether the proposed action (scope of work) encompasses the potential for environmental pollution or concern and, if so, to determine the scope and extent of additional environmental evaluation, mitigation, and monitoring necessary to fulfill federal U.S. environmental requirements.

**Date of Review:****DCN of triggering IEE:****Name of reviewer:** *(must be qualified environmental professional approved by the E&E and CAR/BEO)***Name of Project/Activity:****Type of Project/Activity:****Location:** *(Attach a location map as well as site photos in color)***Project/Activity Description:** *(Provide sufficient description and details for environmental impact analysis)***Baseline Environmental Conditions:** *(Provide site specific environmental conditions due to onsite & offsite sources details for impact analysis)*

**A. CHECKLIST FOR ENVIRONMENTAL CONSEQUENCES:** Check appropriate column as Yes (Y), Maybe (M), No (N) or Beneficial (B). Briefly explain Y, M and B checks in next Section, "Explanations". A "Y" response does not necessarily indicate a significant effect, but rather an issue that requires focused consideration.

Y. M. N or B**1. Earth Resources**

- a. grading, trenching, or excavation in cubic meters or hectare \_\_\_\_\_
- b. geologic hazards (faults, landslides, liquefaction, un-engineered fill, etc.) \_\_\_\_\_
- c. contaminated soils or ground water on the site \_\_\_\_\_
- d. offsite overburden/waste disposal or borrow pits required in cubic meters or tons \_\_\_\_\_
- e. loss of high-quality farmlands in hectares \_\_\_\_\_

**2. Agricultural and Agrochemical**

- a. impacts of inputs such as seeds and fertilizers \_\_\_\_\_
- b. impact of production process on human health and environment \_\_\_\_\_
- c. other adverse impacts \_\_\_\_\_

**3. Industries**

- a. impacts of run-off and run-on water \_\_\_\_\_
- b. impact of farming such as intensification or extensification \_\_\_\_\_
- c. impact of other factors \_\_\_\_\_

**4. Air Quality**

- a. substantial increase in onsite air pollutant emissions (construction/operation) \_\_\_\_\_



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- b. violation of applicable air pollutant emissions or ambient concentration standards \_\_\_\_\_
- c. substantial increase in vehicle traffic during construction or operation \_\_\_\_\_
- d. Demolition or blasting for construction \_\_\_\_\_
- e. substantial increase in odor during construction or operation \_\_\_\_\_
- f. substantial alteration of microclimate \_\_\_\_\_
  
- 5. **Water Resources and Quality**
  - a. river, stream or lake onsite or within 30 meters of construction \_\_\_\_\_
  - b. withdrawals from or discharges to surface or ground water \_\_\_\_\_
  - c. excavation or placing of fill, removing gravel from, a river, stream or lake \_\_\_\_\_
  - d. onsite storage of liquid fuels or hazardous materials in bulk quantities \_\_\_\_\_
  
- 6. **Cultural Resources**
  - a. prehistoric, historic, or paleontological resources within 30 meters of construction \_\_\_\_\_
  - b. site/facility with unique cultural or ethnic values \_\_\_\_\_
  
- 7. **Biological Resources**
  - a. vegetation removal or construction in wetlands or riparian areas in hectare \_\_\_\_\_
  - b. use of pesticides/rodenticides, insecticides, or herbicides in hectare \_\_\_\_\_
  - c. Construction in or adjacent to a designated wildlife refuge \_\_\_\_\_
  
- 8. **Planning and Land Use**
  - a. potential conflict with adjacent land uses \_\_\_\_\_
  - b. non-compliance with existing codes, plans, permits or design factors \_\_\_\_\_
  - c. construction in national park or designated recreational area \_\_\_\_\_
  - d. create substantially annoying source of light or glare \_\_\_\_\_
  - e. relocation of >10 individuals for +6 months \_\_\_\_\_
  - f. interrupt necessary utility or municipal service > 10 individuals for +6 months \_\_\_\_\_
  - g. substantial loss of inefficient use of mineral or non-renewable resources \_\_\_\_\_
  - h. increase existing noise levels >5 decibels for +3 months \_\_\_\_\_
  
- 9. **Traffic, Transportation and Circulation**
  - a. increase vehicle trips >20% or cause substantial congestion \_\_\_\_\_
  - b. design features cause or contribute to safety hazards \_\_\_\_\_
  - c. inadequate access or emergency access for anticipated volume of people or traffic \_\_\_\_\_
  
- 10. **Hazards**
  - a. substantially increase risk of fire, explosion, or hazardous chemical release \_\_\_\_\_
  - b. bulk quantities of hazardous materials or fuels stored on site +3 months \_\_\_\_\_
  - c. create or substantially contribute to human health hazard \_\_\_\_\_
  
- 11. **Other Issues** (to be used for categories not captured under 1 through 10 above)
  - a. Substantial adverse impact \_\_\_\_\_
  - b. Adverse impact \_\_\_\_\_
  - c. Minimal impact \_\_\_\_\_

**B. EXPLANATION OF ENVIRONMENTAL CONSEQUENCES:** explain Y, M and B responses

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**C. RECOMMENDED ACTION (Highlight Appropriate Action):**

1. The project has no potential for substantial adverse environmental effects. No further environmental review is required.
2. The project has little potential for substantial adverse environmental effects; however the recommended mitigation measures will be developed and incorporated in the project design and/or construction, operation and maintenance phases. No further environmental review is required.
3. The project has substantial but mitigatable adverse environmental effects and required measures to mitigate environmental effects. Mitigation and Monitoring (M&M) Plan must be developed and approved by the BEO and/or REO prior to implementation. M&M Plan is to be attached to the Scope of Work.
4. The project has potentially substantial adverse environmental effects, but requires more analysis to form a conclusion. **A Scoping Statement must be prepared and be submitted to the BEO for approval. Following BEO approval an Environmental Assessment (EA) will be conducted. Project may not be implemented until the BEO approves the final EA.**
5. The project has potentially substantial adverse environmental effects, and revisions to the project design or location or the development of new alternatives is required.
6. The project has substantial and unmitigable adverse environmental effects. Mitigation is insufficient to eliminate these effects and alternatives are not feasible. The project is not recommended for funding.

*Note: MEO may approve RECOMMENDED ACTION 1, 2, 5, and 6 in consultation with the BEO. RECOMMENDED ACTION 3 & 4 require BEO approval.*

**D. IDENTIFIED SIGNIFICANT ENVIRONMENTAL IMPACTS** (including physical, biological and social), if any: (Use ER tools such as Leopold Matrix to identify significant environmental impacts)

**E. RECOMMENDED MITIGATION MEASURES** (includes Public Participation in case of all types of community and infrastructure projects):

**F. RECOMMENDED MONITORING MEASURES** (if any):

**APPROVAL:**

Implementer Project Director/COP: \_\_\_\_\_ Date: \_\_\_\_\_

USAID/ Project C/AOR: \_\_\_\_\_ Date: \_\_\_\_\_

USAID/Lebanon MEO: \_\_\_\_\_ Date: \_\_\_\_\_

**COPY TO:**

Middle East Bureau Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_